New claims

1.   Method for redistributing traffic in response to a
traffic overload or link failure in a packet-based network
made up of nodes (1, 2, 3, 4, 5, 6, 7) and links (L31, L32,
L37, L71, L21, L42, L43, L67, L53, L54, L56) with multipath
distribution of packets, with packets with the same
destination being able to be distributed to at least two
links, which are associated with an array of paths (L31, L32,
L37) assigned to the destination, at least for some of the
nodes,

according to which

- a node (3) determines when the traffic load on a link (L31)
going away from it exceeds an upper limit or a link (L31)
going away from it fails,

- the node (3) redistributes the traffic load independently of
external control entities, by routing at least some of the
packets, which would have been routed via the outward link
(L31) had the load distribution not been changed, to one or
more other links (L32, L37) going away from the node (3),
which are assigned to the same array of paths (L31, L32. L37),
and

- if the traffic load does not drop below the upper limit as a
result of the traffic redistribution without a different upper
limit being exceeded on a link going away from the node, a
message is sent to a node (4, 5) that is upstream in respect
of packets distributed via the arrays of paths (L31, L32,
L37), which causes a traffic load redistribution at this
upstream node (4, 5) to reduce the traffic load sent by the
[lacuna] to the [lacuna] and distributed via the arrays of
paths (L31, L32, L37)

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2. Method according to claim 1,

characterized in that

- the traffic load redistribution is carried out in stages in respect of proportions of the overload and
- at the end of a stage there is a waiting period of a time interval before the next stage is initiated.

3. Method according to claim 1 or 2,

characterized in that

- a message is sent to all nodes (4, 5) directly upstream in respect of packets distributed via the arrays of paths (L31, L32, L37) for the purpose of traffic redistribution at these upstream nodes to reduce the traffic load sent by the [lacuna] to the [lacuna] and distributed via the arrays of paths (L31, L32, L37).

4. Method according to one of the preceding claims,

characterized in that

- the message contains information about the required traffic load reduction.

5 Method according to one of claims 4,

characterized in that

- a notified upstream node (4, 5), which cannot achieve the required traffic load reduction for the node in question by means of traffic load redistribution without causing a further upper limit for a traffic load to be exceeded, for its part sends a message to a node upstream from it, prompting said node to carry out the required traffic load reduction by traffic redistribution or by sending messages to upstream nodes.

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6.   Method according to claim 5,

characterized in that

- upstream nodes, which receive a message from the node in question (3) or from an upstream node (4, 5) either carry out the traffic load reduction required according to the message received by traffic load redistribution or send at least one message to an upstream node to reduce the traffic load,

7.   Method according to one of the preceding claims, characterized in that

- an edge node, which receives a message to reduce the traffic load at an upstream node, brings about the required traffic load reduction by reducing the limits for controlling access to the network.

8.   Node (3) for a packet-based network with multipath distribution, with

- means for identifying a traffic overload on a link going away from it and

- means for redistributing traffic to other links going away from the node (3) and associated with the same distribution array, and

- means for sending messages to a node (4, 5) that is upstream in respect of packets sent via the distribution arrays (L31, L32, L37) to request a traffic reduction in the traffic transmitted from the upstream node (4, 5).